CRYPTOGNATHUS STERNALIS, A NEW SPECIES OF PROSTIGMATID MITE FROM OREGON

(Acarina: Cryptognathidae)

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The genus *Cryptognathus* was erected in 1879 by Kramer, with *C. lagena* Kramer named as the type species. In 1902, Oudemans removed the genus from the family Raphignathidae, in which he had placed it in 1893, and made *Cryptognathus* the type genus of the new family Cryptognathidae. Berlese (1916) subsequently described a second species, *Cryptognathus cucurbitae*, and the subspecies *C. cucurbitae* var. *subnitida*.

Baker and Wharton (1952) diagnose the cryptognathids as follows: Small, scarlet red mites measuring from 300 to 400 microns in length; body oval in shape and lacking a suture between propodosoma and hysterosoma; dorsum with a net-like skin pattern, and skin punctate; chitinous extensions of the propodosoma forming a tube which is open ventrally and through which the gnathosoma can be extruded or withdrawn; chelicerae shear-like; chelae small and almost straight, untoothed, and sharp for piercing; genital suckers absent.

In August of 1956, the writer received from Everett C. Burts, research assistant in the Department of Entomology at Oregon State College, a series of mite specimens collected in rotting plant debris at The Dalles, Oregon, on March 28, 1956. Among these specimens was a single cryptognathid mite which, upon examination, proved to be a previously undescribed form.[1]

The new species may be distinguished from the other members of the genus through the use of the following key:

1. Dorsum of idiosoma with net-like skin pattern covering only the lateral edges; length 300 microns; found in Italy, and in nest of *Sciurus n. niger* in Florida.....*Cryptognathus cucurbitae* Berlese
– Net-like skin pattern covering the dorsum of the idiosoma.....2
2. Skin pattern obsolete; length 265 microns; found in Africa.....*Cryptognathus cucurbitae* var. *subnitida* Berlese
– Skin pattern distinct; body of a length greater than that mentioned above 3
3. Rostral prolongation hyaline; length 350–400 microns; found in moss in Europe.....*Cryptognathus lagena* Kramer
– Rostral prolongation deeply sculptured; length 340 microns; found in rotting plant debris in Oregon.....

[1] Six additional females taken from an oak treehole in Corvallis, Oregon, on February 4, 1958, were examined prior to the publication of this paper.

.....*Cryptognathus sternalis* Krantz, new species

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(Figs. 1 and 2)

Female.—Oval in form, the widest point being slightly posterior to coxae IV. Total body length, including the extruded gnathosoma, measures 489 microns. Idiosomal length about 340 microns. Greatest width measures 218 microns. *Dorsum* (Fig. 1) *Idiosoma* with a dorsal plate which does not cover completely the lateral and posterior extremities of the dorsum (secondary extension posteriorly may be result of mounting procedure); with a distinct net-like pattern over its entire surface; strongly punctate. Rostral extension truncate, measuring 78 microns long and 78 microns wide at its base; curving ventrally but open on the ventral aspect; rostral plate deeply sculptured, the identations of the pattern being oval or reniform in shape. A pair of short setae (20 microns) inserted immediately behind the posterior border of the sculptured area. Two pairs of eyes located at the ends of a crescentic ridge lying in a transverse position on a line between the insertions of coxea II and III; two pairs of setae inserted anterior to the ridge and directly interior to the eyes; with a small blunt protuberance of unknown function between and anterior to the insertions of the abovementioned setae. Seven pairs of dorsal and one pair of lateral setae. Insertions of dorsal setae, as well as those of the venter and appendages, noticeably raised. Lateral and posterior marginal areas scalloped, weakly folded. *Anus* posterior; protected dorsally by a pair of triangular plates on each of which is inserted one dorsal and one lateral seta. *Gnathosoma* (Figs. 1 and 2c) long, measuring 218 microns from its base to the tip of the capitulum; sharply divided at points of insertion of the chelicerae. *Capitulum* spear-shaped; with a pair of incurved terminal structues, each of which is flanked by a short lateral seta. Lateral to base of capitulum are inserted the six-segmented *palpi*, measuring 103 microns in length; terminal segment small and bluntly pointed; palpal tibia with at least three setae, the external being the longest; at least two setae located on palpal genu, palpal femur with one, and trochanter with two, dorsal setae. Basad of the palpal insertions are a pair of short club-like organs (Fig. 2c) which may be sensory in function. *Chelicerae* inserted midway between the base and terminal end of gnathosoma; with sharp smooth chelae making up one-third of the total cheliceral length of 113 microns; distal half of chelicerae weakly sculptured. A pair of *spiracular openings* located between the insertions of the chelicerae, with the peritremes forming an arch behind them. *Venter* (Fig. 2a) *Idiosoma* punctate ventrally; with net-like pattern confined to the anterior and posterior portions of the venter, and to the extreme lateral margins. Punctate pattern absent on median anterior portion of the idiosoma; with apodemal remnants of coxae II and III bordering the non-punctate area; median anterior portion flanked anteriorly by a pair of setae inserted between its lateral anterior elongations (Fig. 2b); with a pair of short spine-like processes external and posterior to the abovementioned setae, and a series of short sensory setae or setal processes located along the posterior incurved border. *Genital* opening near the posterior border of idiosoma; covered by two plates, along the anterior border of which are

inserted three pairs of genital setae; with a pair of outlying setae inserted laterad of the most posterior pair of genital hairs. *Anal opening* with a pair of lateral ventral plates, each bearing a single seta. Five pairs of primary ventral setae present, the most anterior pair inserted internally to smooth sternal area; second pair located internally to coxae IV; third pair behind and slightly external to first; fourth pair internal to second and noticeably shorter than the latter; fifth pair inserted immediately anterior to the sculptured posterior portion of the idiosoma. Three pairs of lateral

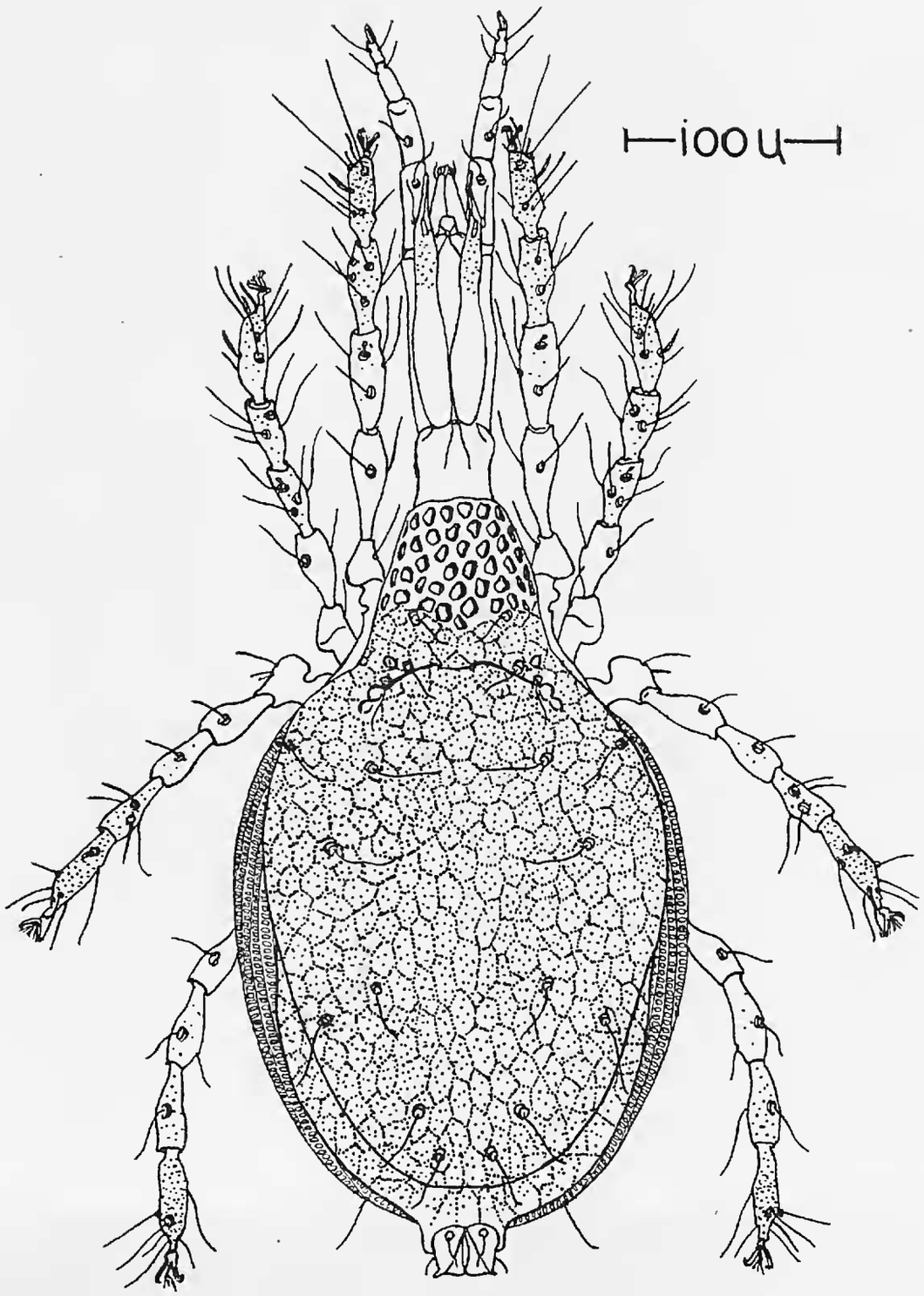

Fig. 1. *Cryptognathus sternalis*, dorsal view of female with gnathosoma extruded.

posterior sensory pores present, the most posterior pair lateral and external to the fourth pair of primary setae. Two pairs of pore-like structures located externally and behind the second pair of primary setae. *Legs* (Fig. 1) All tarsi with well developed claws and a haired empodium; distal segments of all legs noticeably sculptured, with the pit-like markings disappearing toward the insertions of these appendages. Tarsus I with twelve setae, two of which are long sensory hairs (49 microns) inserted adjacent to each other on the dorsal distal portion; with a shorter rod-like hair inserted dorsolaterally on the median external portion. Tibia I with seven setae, one of which has a ventral position; with two dorsal distal hairs, the external nearly twice the length of the internal hair. Five setae located on genu I; with a short knobbed sensory organ inserted toward the dorsal distal end of the segment. Femur I with three setae, one being ventrally inserted. Trochanter I swollen externally and bearing a single seta on its lateral internal aspect. Length of leg I, 222 microns. Tarsus II with ten setae, none of which are as long as the sensory setae on tarsus I; with a rod-like hair inserted dorsolaterally on the median external portion. Tibia II with six setae, the single ventral hair occupying a position similar to that of the ventral setae on the following segments. Genu II with four hairs, two of which are dorsal in insertion; with a knobbed sensory organ similar to that on genu I. Femur II and trochanter II resembling femur and trochanter I, except for their somewhat shorter combined length. Length of leg II, 185 microns. Tarsus III with eight setae, and a rod-like sensory hair on the dorsal aspect. Five setae inserted on tibia III, the two ventral hairs exceeding the others in length. Genu and femur III each with two setae; with one inserted dorsally and one placed ventrally on each segment. Trochanter III swollen externally; with a ventral and a dorsal seta. Length of leg III, 195 microns. Tarsus IV with seven setae and a short dorsal hair approximating in insertion and length the rod-like hair on the preceding tarsi. Tibia IV with two setae, one inserted dorsally and the other ventrally. Trochanter IV not quite as swollen as those of preceding legs; with no setal insertions. Length of leg IV, 234 microns.

Discussion

Probably the most interesting morphological feature of this unusual acarid is the presence of a well-defined sternal area which resembles, in some respects, the sternal plate of the more primitive mesostigmatid mites. The sternal area of *C. sternalis* apparently is not a true plate but a symmetrical region lacking the punctate markings distributed generally over the remainder of the venter. However, it appears possible that this entity may be a remnant of a true sternal plate. Not only is there a definite resemblance to the mesostigmatid sternal plate in shape and disposition, but setal homologies could easily be assumed, especially when comparing the sternal area in question with the sternal plates of nymphs of various parastid and other gamasid mites.

Holotype female, The Dalles, Oregon, in rotting plant debris

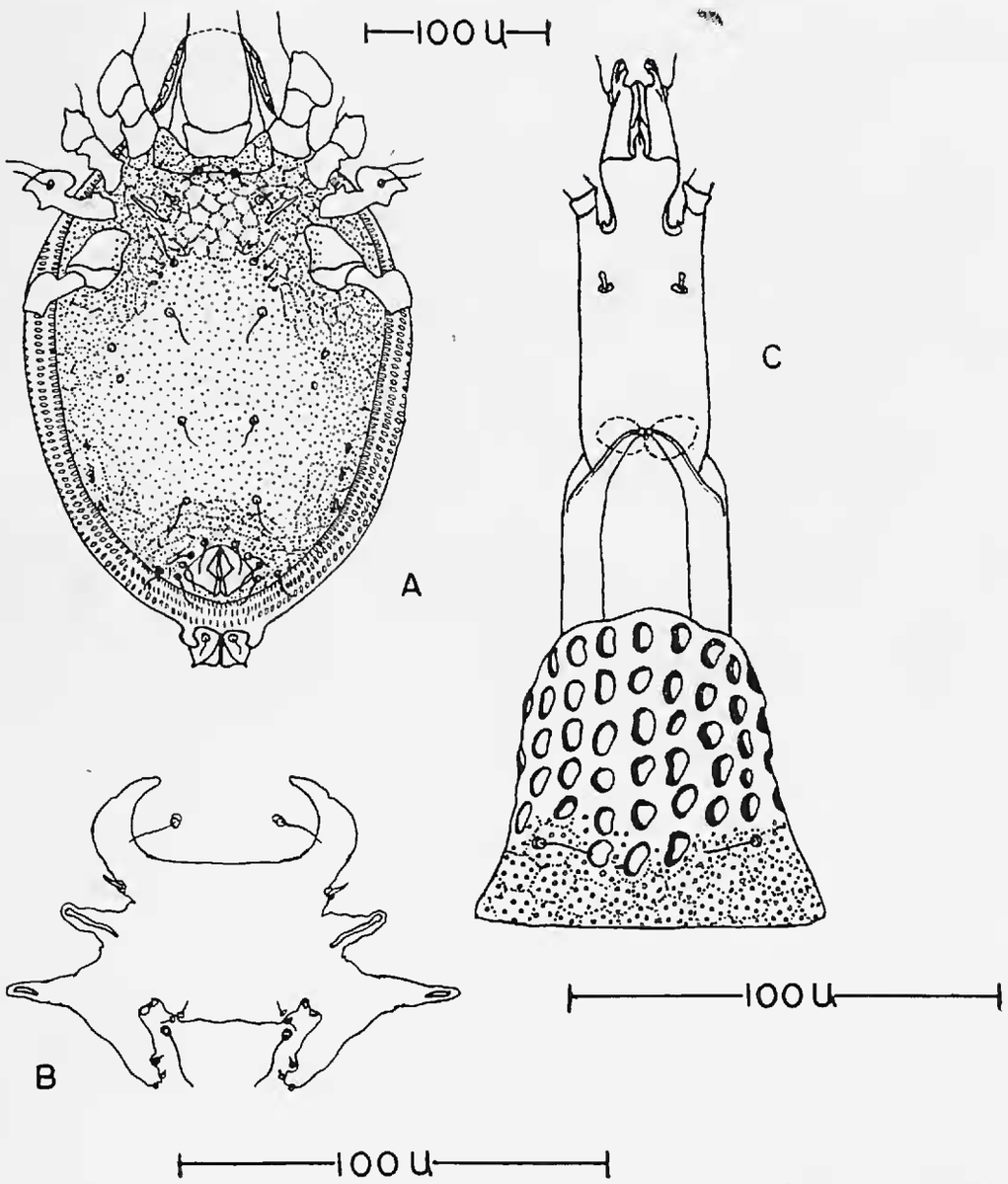

Fig. 2. *Cryptognathus sternalis, (a)* Venter of female; *(b)* Anterior sternal area; *(c)* Dorsal view of gnathosoma with chelicerae removed.

under cherry trees on March 28, 1956, collected by E. C. Burts, will be deposited in the collection of the U. S. National Museum in Washington, D.C.

The drawings were made and data was collected with the aid of a Spencer phase contrast microscope equipped with dark medium contrast objectives and illuminated by a Spencer advanced laboratory illuminator.

Literature Cited

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